

IN THE CLAIMS:

Please substitute the following claims for the same-numbered claims in the application.

1-21 (Canceled).

22. (Currently Amended) A method for improving TCP throughput over lossy communication links without affecting performance over non-lossy links comprising:

determining lookahead-loss which is the number of lost packets in a given loss-window;
using said loss-window and said lookahead loss to detect congestion in said
communication links; and

controlling transmission under congestion conditions as well as under normal conditions,
wherein said controlling transmission comprises controlling a size of said loss-window
by:

beginning in a slow-start phase;
advancing to a congestion avoidance phase when a slow-start threshold is reached;
entering a halt growth phase when the [[a]] first level of packet loss has been
recovered occurs;

returning to said congestion avoidance phase when a first level of packet recovery
occurs;

entering a k-recovery phase when a second level of packet loss occurs,
wherein said loss window and said slow-start threshold are reduced in half and
returning to said congestion avoidance phase when the second level of packet loss has been

recovered is restarted.

23. (Currently Amended) The method as claimed in claim 22, wherein said determining of lookahead-loss is for identifying the number of packets transmitted by a sender in said ~~loss-~~
~~window~~ loss-window for which at least one of the following conditions is true:

said sender has received at least max-dupacks duplicate cumulative acknowledgements,
and

said sender has neither received acknowledgement nor selective acknowledgment for said packets, while it has received selective acknowledgements for at least ~~mmax-dupsacks~~ max-dupsacks packets with higher sequence numbers.

24. (Previously Presented) The method as claimed in claim 22, wherein said detecting of congestion is for identifying when the number of packets lost in said loss-window is greater than an appropriately selected preset number.

25. (Currently Amended) The method as claimed in claim 22, wherein said controlling transmission is a TCP k-SACK protocol which is a modification of a fast retransmit algorithm of a basic congestion control algorithm of TCP to include entering a 'halt growth phase' whenever said lookahead loss is greater than zero and congestion is not detected, and entering 'a k-recovery phase' whenever the congestion is detected.

26. (Previously Presented) The method as claimed in claim 25, wherein during said 'halt

growth phase' a sender freezes a congestion window and maintains it in that state.

27. (Previously Presented) The method as claimed in claim 25, wherein said entry into 'k-recovery phase' reduces a congestion window to half its original size, while a slow-start threshold is reduced to half only on a first occasion of entry into the k-recovery phase during a packet loss recovery cycle.

28. (Cancelled).

Please add the following new claims:

29. (New) A computer program product comprising computer readable program code stored on computer readable storage medium embodied therein for improving TCP throughput over lossy communication links without affecting performance over non-lossy links comprising:

a computer readable program code configured for determining lookahead-loss which is the number of lost packets in a given loss-window;

a computer readable program code configured for using said loss-window and said lookahead loss to detect congestion in said communication links; and

a computer readable program code configured for controlling transmission under congestion conditions as well as under normal conditions,

wherein said computer readable program code configured for controlling transmission comprises a computer readable program code configured for controlling a size of said loss-window by:

beginning in a slow-start phase;
advancing to a congestion avoidance phase when a slow-start threshold is reached;
entering a halt growth phase when the first level of packet loss has been
recovered;
returning to said congestion avoidance phase when a first level of packet recovery
occurs;
entering a k-recovery phase when a second level of packet loss occurs,
wherein said loss window and said slow-start threshold are reduced in half and
returning to said congestion avoidance phase when the second level of packet loss has been
recovered.

30. (New) The computer program product as claimed in claim 29, wherein said computer readable program code configured for determining of lookahead-loss comprises a computer readable program code configured for identifying the number of packets transmitted by a sender in said loss-window for which at least one of the following conditions is true:

said sender has received at least max-dupacks duplicate cumulative acknowledgements,
and

said sender has neither received acknowledgement nor selective acknowledgment for said packets, while it has received selective acknowledgements for at least max-dupsacks packets with higher sequence numbers.

31. (New) The computer program product as claimed in claim 29, wherein said computer

readable program code configured for detecting of congestion comprises a computer readable program code configured for identifying when the number of packets lost in said loss-window is greater than an appropriately selected preset number.

32. (New) The computer program product as claimed in claim 29, wherein said computer readable program code configured for controlling transmission is a TCP k-SACK protocol which is a modification of a fast retransmit algorithm of a basic congestion control algorithm of TCP to include entering a 'halt growth phase' whenever said lookahead loss is greater than zero and congestion is not detected, and entering 'a k-recovery phase' whenever the congestion is detected.

33. (New) The computer program product as claimed in claim 32, wherein during said 'halt growth phase' a sender freezes a congestion window and maintains it in that state.

34. (New) The computer program product as claimed in claim 32, wherein said entry into 'k-recovery phase' reduces a congestion window to half its original size, while a slow-start threshold is reduced to half only on a first occasion of entry into the k-recovery phase during a packet loss recovery cycle.